

Environmental Product Declaration

Cantata Chairs



CPC Code | 3811
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Market Coverage | Worldwide

 **EPD**[®]
TURKEY

ENVIRONMENTAL PRODUCT DECLARATIONS

KOLEKSİYON

Information

The LCA for this EPD is conducted according to the guidelines of ISO 14040/44 and the requirements given in the Product Category Rules (PCR) document for Seats, (ver. 2.0, 2015 11 03) and the general program guidelines by The International EPD System in accordance with ISO 14025 standards.

The inventory for the LCA study is based on the 2017 production figures for Cantata Chairs manufactured by Koleksiyon Mobilya San. A.Ş. (Koleksiyon) in their production plants located in Tekirdağ, Turkey.

This LCA was modelled with SimaPro 8.5 LCA software using the impact factors and Ecoinvent database (ver. 3.4) for secondary data and Turkish Life Cycle Inventory Database - TLCID (ver.1.0) developed by Turkish Centre for Sustainable Production Research and Design - SÜRATAM for local data in Turkey.

In accordance with ISO14025 for Cantata Chairs



The visual of the product may not be compatible with the product information which is registered.

The environmental impacts of this product have been assessed from cradle to grave. Environmental Product Declaration has been verified by an independent third party.

For more information about this Environmental Product Declaration or its content, please contact internationalsales@koleksiyon.com.tr

	The International EPD® System www.environdec.com
EPD PROGRAMME	EPD Turkey, Istanbul - Turkey www.epdturkey.org
EPD OWNER	KOLEKSİYON MOBİLYA SANAYİ A.Ş Istanbul - Turkey www.koleksiyon.com.tr www.koleksiyoninternational.com
DECLARED UNIT	One unit of furniture
EPD BASED ON PRODUCT CATEGORY RULES (PCR)	PCR 2009:02 Seats, ver. 2.0, 2015-11-03 The International EPD® System
PCR REVIEW CONDUCTED BY	Technical Committee of the International EPD® System Review chair: Leo Breedveld www.environdec.com info@environdec.com
INDEPENDENT VERIFICATION AND DATA, ACCORDING TO ISO 14025:2006	<input type="checkbox"/> Internal <input type="checkbox"/> External <input checked="" type="checkbox"/> EPD® Process Certification
SYSTEM BOUNDARIES	<input type="checkbox"/> Cradle to Gate <input type="checkbox"/> Cradle to Gate with Option <input checked="" type="checkbox"/> Cradle to Grave
APPROVED AND VERIFIED BY	Certiquality S.r.l. www.certiquality.com
LCA REPORT AND EPD PREPARED BY	Metsims Sustainability Consulting www.metsims.com

EPDs within the same product category but from different programmes may not be comparable.

Company

Competitive in the global marketplace, Koleksiyon holds to global standards and has internalized the protection principles of natural resources, the environment and the provision of healthy and safe environments for all his employees, partners in all business processes.

The company continuously improves his processes with the integrated management system to ensure the fair balance between efficiency, productivity and safety.

Koleksiyon puts emphasis on internal waste management and facilitating a high level of recycling in all processes with a commitment to continuous improvement.

Using technology, environmentally friendly and recyclable materials when designing products and services, Koleksiyon always aims at protecting the environment as well as human safety. The brand is also willing to ensure that each employee truly knows the importance of his/her contribution towards the green and sustainable environment.

Koleksiyon has a recognized reputation for delivering design and service excellence both in its homeland of Turkey and around the world. The brand is known for its clean and understated intelligent design, for its quality of manufacture and for its insight into the needs and concerns of customers.

Based on its key guiding principles and forty years' experience Koleksiyon designs are based on a profound knowledge of culture, history and geography. Its solutions reclaim the past that we know with colors, sounds and shapes. At the same time, Koleksiyon product designs anticipate the future we do not yet know. The aim is always to pursue excellence and to hold true to certain values. Koleksiyon knows that there is always a line that runs from the past to the future, that as well as local cultures and ideals, there are eternal and universal values that we all share and that what is essential is understanding the art and craft as it is tied up in a particular time and place.

Koleksiyon is compliant to following international standards: ISO 14001 EMS, OHSAS 18001, ISO 9001 QMS, ISO 10002 QM-CS, ISO 50001 EnMS, ISO/IEC 27001 ISMS.

Product Information

Offering smart solutions for different reception areas and workplaces, Cantata family products display an elegant and neat look when matched together.

Designed for communal areas, Cantata chairs come with three different colour options to suit diverse design concepts. Offering smart solutions for different reception areas and workplaces, Cantata family products display an elegant and neat look when matched together.

LIST OF MATERIALS FOR CANTATA CHAIR



MATERIALS		CONTENTS (kg)
Auxiliary Materials	PVC	2.87
	Steel	2.24
Main or Auxiliary	PVC	0.006
	Steel	0.014
Fittings	PVC	0.046
	Corrugated Board	3.02
Packaging Materials	PE	0.052

System Boundary

Upstream Process

Upstream processes include raw material extraction and production processes and manufacturing of auxiliary materials, chemicals and packaging materials.

Core Process

Core processes include transport of materials to the manufacturer and operations for manufacturing.

Manufacturing includes sizing and painting of product parts and assembly. The end products are then packaged to be sold. Electric energy and natural gas are consumed during manufacturing.

Downstream Processes

Downstream processes include transportation from manufacturer to consumer, product use and disposal of both product and packaging.

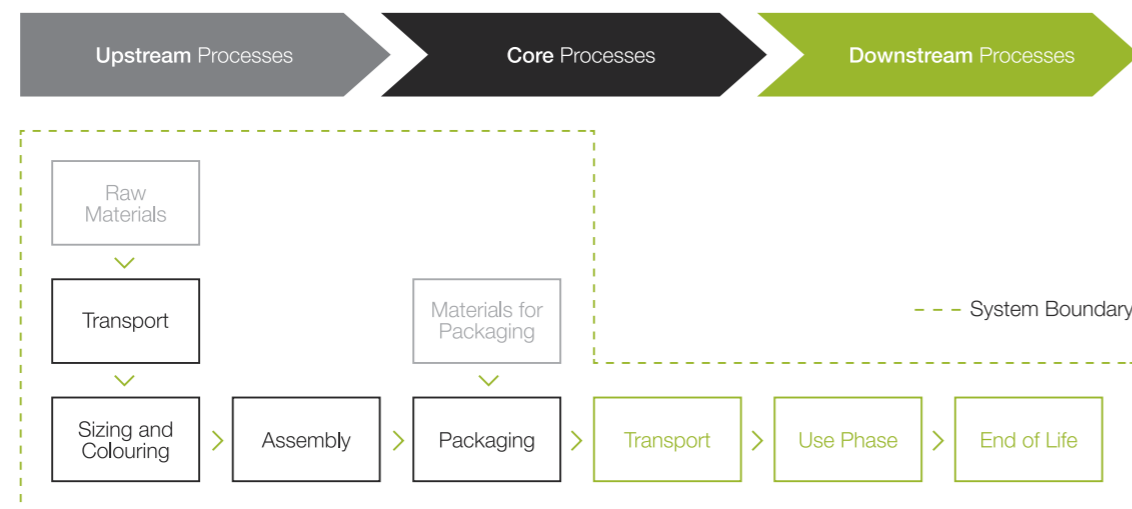
Distribution of final product to customer is assumed to be a default long distance transport of 1000 km by lorry defined by the PCR.

During use phase of the product, no energy or water is consumed. The product can be cleaned with a dry or damp cloth and do not require maintenance during its lifetime.

At the end of its life, it is expected from customers to dispose the product in accordance with the legal regulations of the country where they reside. The product is easy to disassemble and recycle. For the disposal scenario of the product European average recycling values were taken for steel, aluminium and plastic parts as 83%, 90% and 69.2% respectively. Other materials assumed to end up at landfill.

Packaging waste is assumed to end up at packaging recycling streams due to the relevant national law in Turkey in 2017, which requires manufacturers to have certain percentage of their packaging waste to be recovered.

SYSTEM BOUNDARY OF THE LCA STUDY CONDUCTED



Environmental Performance Related Information

FUNCTIONAL UNIT / DECLARED UNIT	The declared unit is the production of one unit of furniture with a minimum 15 years lifetime.
GOAL AND SCOPE	This EPD evaluates the environmental impacts of one unit of furniture from cradle to grave life cycle perspective.
SYSTEM BOUNDARY	The system boundary covers upstream, core and downstream processes within the life cycle. There are no additional product scenarios developed for this EPD. Distribution of final product to customer is assumed to be 1000 km by lorry. During use phase of the product, no energy or water consumption is assumed. At the end of its life, it was assumed that the metal parts of the product were recycled according to the European average recycling rates and the rest of the materials end up at landfill.
ESTIMATES AND ASSUMPTIONS	Packaging waste for declared products are modelled based on the collection rates enforced by Packaging Waste Control Regulations of 27.12.2017 and No. 30283.
CUT-OFF RULES	For this LCA study, no cut off criteria was applied.
BACKGROUND DATA	TLCID, ver 1.0, Turkey. Ecoinvent, ver. 3.4, Switzerland
DATA QUALITY	Raw materials, electricity, natural gas, water use and waste data collected from Koleksiyon. Localized data especially on energy and other relevant processes were taken from TLCID Database.
PERIOD UNDER REVIEW	All primary data collected from Koleksiyon plant is for the period year of 2017. There are no co-products in the production of Cantata Chairs manufactured by Koleksiyon. Hence, there was no need for co-product allocation. Use of energy per unit of furniture is allocated based on the time spent in the manufacturing line from yearly energy consumption of each workshop. Koleksiyon sources raw materials and goods from different locations across Turkey and other parts of the world and by different means of transport (truck, ship and train). For this reason, transport was allocated according to tonnages.
ALLOCATIONS	

All the waste resulting from the main production and related processes of Koleksiyon is managed in accordance with valid legal requirements.

The results of the LCA with the indicators as per EPD requirement are given in the following tables for upstream, core and downstream processes shown in the system boundary section.

All resource use values are determined from Cumulative Energy Demand V1.10 life cycle inventory of products, while environmental impacts are calculated with the CML-IA baseline V4.8 except AP with CML 2001 non-baseline methodology, Recipe 2016 Endpoint (H) V1.01 and USEtox (recommended + interim) V1.04 and AWARE V1.01 methods available with SimaPro LCA Software. For POCP in CML-IA baseline V4.8 NO_x emission factor is taken from CML V4.8 (August 2016).

ENVIRONMENTAL INDICATORS

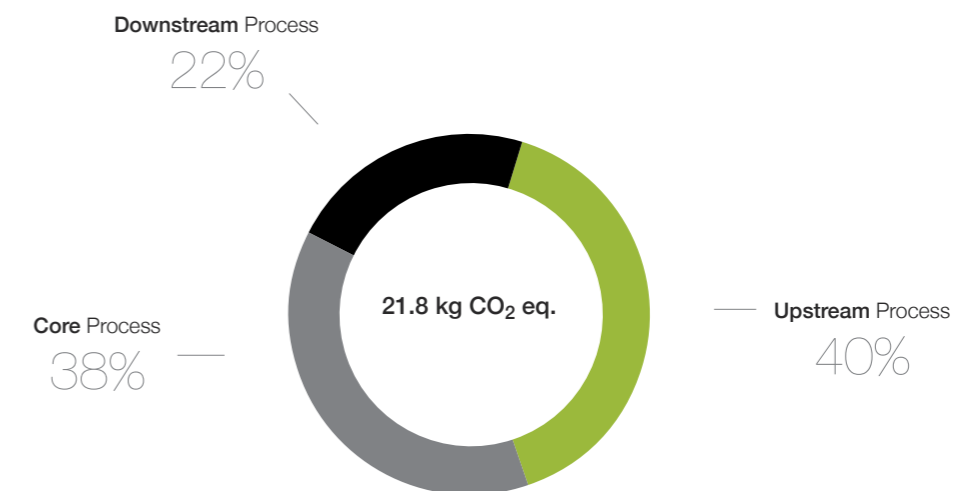
RESOURCE USE						
Parameter	Unit	Upstream Processes	Core Processes	Downstream Processes	Total	
NON-RENEWABLE RESOURCES						
Material	Calcite	[kg]	0.767	0.037	0.030	0.834
	Bauxite	[kg]	0.091	0.008	0.011	0.110
	Dolomite	[kg]	0.050	0.001	0.001	0.052
	Gravel	[kg]	1.11	0.341	1.69	3.14
	Iron	[kg]	2.46	0.027	0.037	2.53
	Sodium Chloride	[kg]	0.031	0.002	0.001	0.035
Energy	Hard Coal	[kg]	1.84	0.551	0.094	2.49
	Lignite	[kg]	0.311	0.760	0.025	1.10
	Oil, crude	[kg]	0.408	1.86	0.543	2.81
	Natural gas	[kg]	1.35	0.701	0.076	2.12
	Uranium	[MJ]	7.68	0.753	0.538	8.97
RENEWABLE RESOURCES						
Material	Wood	[kg]	1.24	0.010	0.008	1.26
	Geothermal	[MJ]	0.053	0.518	0.005	0.576
	Wind power	[MJ]	0.327	1.02	0.034	1.39
Energy	Hydropower	[MJ]	2.42	4.46	0.230	7.11
	Biomass	[MJ]	24.1	0.176	0.148	24.4
	Solar	[MJ]	0.006	0.050	0.002	0.058
WATER USE						
Total amount of water	[m ³]	0.087	0.017	0.005	0.110	
Direct amount of water used by the core process	[m ³]	-	0.000	-	0.000	

OUTPUT FLOWS AND WASTE CATEGORIES					
Parameter	Unit	Upstream Processes	Core Processes	Downstream Processes	Total
HWD	[kg]	-	0.000	0.000	0.000
NHWD	[kg]	-	0.000	11.1	11.1
RWD	[kg]	-	0.000	0.000	0.000

Legend HWD: Hazardous Waste Disposed, NHWD: Non-Hazardous Waste Disposed, RWD: Radioactive Waste Disposed

ENVIRONMENTAL IMPACTS					
Parameter	Unit	Upstream Processes	Core Processes	Downstream Processes	Total
GWP	[kg CO ₂ eq.]	8.71	8.37	4.76	21.8
AP	[kg SO ₂ eq.]	0.032	0.037	0.007	0.076
POCP	[kg C ₂ H ₄ eq.]	0.002	-0.001	0.000	0.001
EP	[kg PO ₄ ³⁻ eq.]	0.015	0.012	0.008	0.035
HT (cancer)	[cases]	1.47x10 ⁻⁶	0.218x10 ⁻⁶	0.105x10 ⁻⁶	1.79x10 ⁻⁶
HT (non-cancer)	[cases]	1.69x10 ⁻⁶	0.566x10 ⁻⁶	0.913x10 ⁻⁶	3.17x10 ⁻⁶
Ecotoxicity	[paf.m ³ .day]	51.9x10 ⁺³	23.6x10 ⁺³	87.0x10 ⁺³	162x10 ⁺³
Land use	[species.yr]	11.6x10 ⁻⁹	0.289x10 ⁻⁹	0.639x10 ⁻⁹	12.5x10 ⁻⁹
WSI	[m ³]	2.20	1.39	0.204	3.80

Legend GWP: Global Warming Potential, AP: Acidification Potential, POCP: Formation Potential of Tropospheric Ozone Photochemical Oxidants, EP: Eutrophication Potential, HT: Human Toxicity, WSI: Water Scarcity Index (AWARE)



References

ISO 14001

Environmental Management Systems

OHSAS 18001

Occupational Health and Safety Management

ISO 9001

Quality Management System

ISO 14025

DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations - Principles and procedures

ISO 14040/44

DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO 14040:2006) and Requirements and guidelines (ISO 14044:2006)

PCR FOR SEATS

Prepared by IVL Swedish Environmental Research Institute, Swedish Environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB, The International EPD System, ver. 2.0, Date 2015 11 03

THE INTERNATIONAL EPD® SYSTEM

The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025 .www.environdec.com

ECOINVENT

Ecoinvent Centre, www.Eco-invent.org

SIMAPRO

SimaPro LCA Software, Pré Consultants, the Netherlands,
www.pre-sustainability.com

TLCID

Turkish Life Cycle Inventory Database, Turkish Centre for Sustainable Production Research and Design - SÜRATAM
www.suratam.org

RECYCLING RATES

Steel: Post consumer steel product recovery rate by sector, weighted global average, World Steel Association, Sustainable Steel, At the core of a green economy, 2012.

Aluminium: Aluminium Recycling in Europe, European Aluminium Association and Organisation of Aluminium Refiners and Remelters, 2006.

Plastic: Plastics – the Facts 2016, An analysis of European plastics production, demand and waste data, Plastics Europe, 2016.

Verification & Registration

PROGRAMME

The International EPD® System
www.environdec.com



EPD registered through the fully aligned regional programme:
EPD Turkey
www.epdturkey.org



EPD International AB
Box 210 60
SE-100 31 Stockholm, Sweden

EPD Turkey:
SÜRATAM-Turkish Centre for Sustainable Production Research & Design
Nef 09 B Blok No:7/15, 34415 Kağıthane / Istanbul, Turkey
www.suratam.org

PROGRAMME OPERATOR

THIRD PARTY VERIFIER

Certiquality S.r.l.
Via Gaetano Giardino 4, Milan, Italy
www.certiquality.com



Koleksiyon Mobilya
Cumhuriyet Mah. Hacı Osman Bayırı Cad.
No:25 Sanyer 34457 Istanbul - Turkey
www.koleksiyoninternational.com



OWNER OF THE DECLARATION

LCA AUTHOR AND EPD GRAPHIC DESIGN

Metsims Sustainability Consulting
Lalegül Sok. No:7/18 34415 4.Levent Istanbul - Turkey
www.metsims.com
4 Clear Water Place
Oxford OX2 7NL
United Kingdom



Global Network

North America

NEW YORK

Koleksiyon New York
228 East 58th New York,
NY 10022 USA
Tel: +1 212 486 7500
info@koleksiyon.us

DALLAS

Koleksiyon Dallas
211 North Ervay, Suite 130
Dallas, TX 75201 USA
Tel: +1 214 577 6070
info@koleksiyon.us

CHICAGO

Koleksiyon Chicago
222 Merchandise Mart Plaza
11th Floor No: 113A
Chicago, IL 60654 USA
Tel: +1 214 577 6070
info@koleksiyon.us

South America

COLOMBIA

Schaller Group
Cra 11 No: 93A-20
Bogota, Colombia
Tel: +57 1 743 560
mariam@schallertech.com

CIS

RUSSIA

Workplace Interiors Ltd.
Moscow Russia
Tel: +7 926 124 48 48
Info@workplace.com.ru

Planmax

Piskarevskij Prospect,
2 Building 2, Office 221
Business Center "Benois"
195027, St. Petersburg, Russia
Tel: +7 812 612 12 95
info@planmax.ru

AZERBAIJAN

Workplace Interiors
Marine Plaza, 62 Uzeyir Hajibeyli Street
Baku, Azerbaijan
Tel: +99 412 599 05 82 / 83
ilham.behbudov@workplace.az

Knock Knock Interiors

Neftchiler Ave. 151
Baku, Azerbaijan
Tel: +99 412 493 62 22
ilham.behbudov@workplace.az

KAZAKHSTAN

V-time Object Office Ltd.
Office 111, b/c 'Prime'
Furmanova 100 'g' 050000, Almaty,
Kazakhstan
Tel: +7 727 312 11 22 / 23
v-time@yandex.ru

Asia Pasific

AUSTRALIA

Envoy Furniture
Suite 30391 Murphy Street
Richmond 3121 Melbourne, Australia
Tel: +61 3 9029 3161
dan@envoyfurniture.com.au

Europe

ENGLAND

Koleksiyon Möbel Limited
9 Brewhouse Yard
London EC1V 4JR United Kingdom
Tel: +44 (0)20 3405 1885
info@koleksiyon.co.uk

GERMANY

Koleksiyon Möbel GmbH
Kaisstraße 16a, 40221 Düsseldorf,
Germany
Tel: +49 177 545 6562
info@koleksiyon.de

AUSTRIA

Buerofreunde GmbH
Börsegasse 9, A-1010
Vienna, Austria
Tel: +43 1 532 028 7
office@buerofreunde.at

SPAIN

Artis, Arquitectura Interior
Entença 242, 08029
Barcelona, Spain
Tel: +34 973 25 78 00
artis@artis.es

NETHERLANDS

DingsDesign B.V.
G. van Nijenrodestraat 151 3621 GJ
Breukelen, The Netherlands
Tel: +31 63195 1872
info@loading-ddesign.com
thijs@loading-ddesign.com

POLAND

"R19" Sp. z o.o. Sp.K
ul. Rydygiera 19/U8
01-793 Warszawa, Poland
Tel: +48 662 505 075
office@r19.com.pl

CYPRUS

Divani Mobilya
2 İrmak Sokak Gönyeli Çemberi,
Gönyeli, Nicosia, Cyprus
Tel: +90 392 224 04 50 - 51
fetanetcan@gmail.com

MEA & Africa

EGYPT

Koleksiyon Egypt
The 47th Building, 90th Street
North 5th Settlement, New Cairo, Egypt
Tel: +20 2266 87 01
info@koleksiyonegypt.com

DUBAI

Palmon Group
Junction 5, road 621 P.O. Box 16753
Jebel Ali Free Zone
Dubai, United Arab Emirates
Tel: +9714 8817000
fnashed@palmongroup.com

JORDAN

Triology Furniture Company
Iritiria Str. Um Uthienah Vista
P.O. Box 630 - 11118 Amman, Jordan
Tel: +962 6 5563778
salah@trilogyfurniture.com

SAUDI ARABIA

Technolight - Jeddah
P.O. Box 12679 Jeddah 21483
Saudi Arabia
Tel: +966 2 669 3241
hazemalazem@technolight-ksa.com

Technolight - Riyadh

P.O. Box 17420 Riyadh 11484
Saudi Arabia
Tel: +966 11 462 1150
riyadhbranch@technolight-ksa.com

BAHRAIN

Builders Depot
Office No: 53 Building No: 50
Block No: 434 Karbabad, Seef District
Kingdom of Bahrain
Tel: +973 39 665232
malanni@archincorp.com

QATAR

Al Mana Galleria
Salwa Road Ramada Signals
Nissan Showroom
P.O. Box 91 Doha, Qatar
Tel: +974 4 428 3636
cihan.koseoglu@almanagalleria.com.qa

IRAN

A1 Design
Unit 91, No:1/2, Tavazoei St.
Qeytariyeh Blvd, Tehran, Iran
Tel: +98 21 22 80 72 80
info@A1.Design

Turkey

ADANA

Atatürk Cad. Sular Yolu No: 73/1 01120
Tel: +90 322 459 91 22
adana@koleksiyon.com.tr

ANKARA

Fatih Sultan Mah. Dumlupınar Blv.
No: 396 Etimesgut
Tel: +90 312 467 71 00
ankara@koleksiyon.com.tr

ANTALYA

Metin Kasapoğlu Cad.
Gökhan İş Merkezi No: 21/B
Tel: +90 242 311 11 38
antalya@koleksiyon.com.tr

BODRUM

Atatürk Bulvarı Merkez Mahallesi
Konacık Mevkii No:131
Bodrum / Muğla
Tel: +90 252 363 91 22
bodrum@koleksiyon.com.tr

GAZIANTEP

Sarı Güllük Mah.
Mareşal Fevzi Çakmak Blv.
No: 33 Şehitkamil
Tel: +90 342 335 51 55
gaziantep@koleksiyon.com.tr

İZMİR

Mithatpaşa Cad. No: 142/A Karataş
Tel: +90 232 482 20 01
izmir@koleksiyon.com.tr

TEKİRDAĞ

Malkara Yolu 6.km Doğandere Mevkii
59160 Tekirdağ
Tel: +90 282 258 58 00
tekirdag@koleksiyon.com.tr

İSTANBUL

Caddebostan
Bağdat Caddesi No: 274
Tel: +90 216 478 22 66
caddebostan@koleksiyon.com.tr

Masko

Masko Mobilyacılar Çarşısı
7-B Blok No: 3-5 İkitelli
Tel: +90 212 675 09 00
masko@koleksiyon.com.tr

Modoko

Modoko Sitesi 3.Cadde No: 222
Yukarı Dudullu, Ümraniye
Tel: +90 216 540 49 49
modoko@koleksiyon.com.tr

Tarabya

Cumhuriyet Mah.
Hacı Osman Bayırı Cad. No: 25 Sarıyer
Tel: +90 212 363 63 63
info@koleksiyon.com.tr

Zeytinburnu

Kazlıçeşme Mah. Kennedy Cad.
No: 64/A Zeytinburnu
zeytinburnu@koleksiyon.com.tr